WINS FIFTY YEAR FIGHT WITH FIRE

Coal Worth $2,000,000,000 Saved by Engineer.

MANY PLANS TRIED IN VAIN

Success Comes Finally With Building of Concrete Wall Cutting Off From Flames Main Body of Threatened Fuel in Gigantic "Thumb."

In order to save 400,000,000 tons of coal from a mine that had been burning half a century one of the most remarkable operations in the history of American engineering has just been completed at Mauch Chunk, Pa.

The fire was discovered in the mines on Feb. 19, 1859. During all the time it has been raging, while two generations were coming and going, it has consumed 10,000,000 tons of coal, estimated to be worth $25,000,000.

Succeeding administrations of the company owning the land have recognized that the greatest service they could do the company was to stop the progress of the flames before they finally got into the main deposit and destroyed all the coal.

Coal Worth Billions in Danger.

Four hundred million tons of that lay in danger, and this represented a value of $2,000,000,000.

It was a stake well worth playing for and well worth exerting the last atom of ingenuity and spending a fortune in cash if the advance of the flames could be checked.

One plan after another was tried by engineer after engineer, but the result was always the same—failure and a big outlay of money for which no return could be shown.

In the early stages the blunder was made of attempting to subdue the flames with water, but this only made the situation worse. The water coming in contact with the flames produced explosions that cracked the coal open and made new paths along which the fire could make its way.

Sometimes the fire would slow up a bit, and engineers would get the idea that they had succeeded. On one occasion, indeed, it seemed to have stopped altogether, but just when this hope dawned the flames broke out afresh in still more powerful volume, and the sacrifice of valuable coal land went on unabated.

Gigantic "Thumb" of Coal.

Only one fortunate circumstance came to the aid of the man who has now finally succeeded in making the winning fight against the fire, W. A. Lathrop. This is the shape of the deposit. The general shape of the Panther creek coal basin has been likened to that of a man's hand, with the thumb extended and the other fingers held together. The spur that marks the thumb extends to Summit Hill, and at the end of the thumb the slope was originally opened up.

The point where the fire started fifty years ago was on the outside of the thumb. It has taken fifty years for the flames to eat up this giant thumb, but after the accomplishment of the job the next step of the work of devastation would be to get into the main part of the hand.

Once into the hand there would have been nothing to stop the progress, and 400,000,000 tons of coal must inevitably have been sacrificed.

But there is where science, in the person of Engineer Lathrop, came to the rescue. In addition to being an expert on engineering subjects Mr. Lathrop is also the president of the company, and he has been for a long time devoting himself to study of the subject in order to save the great coal deposit.

He first tried in vain the plan of "slushing holes." Long borings were made across the spur and in advance of the rapidly moving flames. It was difficult work, for the heat was great, and the men who gave the battle had to be constantly relieved.

Those 700 holes were driven down to the water level and were then filled with mud, the idea being to form a barrier of wet clay between the fire and the main coal deposit.

Slush No Bar to Flames.

The deepest of the holes was so deep that it took 8,000 tons of the slush to fill it. But ten times that much would have proved unavailing. The flames went right through the slush the same as if it had been so much combustible material.

In December, 1908, the fire went through the last of the mud defenses and brought Mr. Lathrop to the decision that only one thing could save the main coal deposit. A solid concrete wall must be placed ahead of the flames.

This was to be built exactly on the same lines as the fireproof wall that guards a dwelling—for instance, a theater.

Only in this case was presented the enormously difficult project of sinking such a wall 175 feet deep into the earth. It had to be twelve feet thick to make sure that no flame could get through it, and in order to make a long enough contact to the flames, something that they could not work around, it was necessary to have 1,050 feet of it, or nearly one-fifth of a mile.

In some places it was found that 175 feet of depth was not enough, and the wall had to be carried down to a depth of 247 feet.

The building of this wall was a hazardous task. Shafts were sunk, and then the cut was walled up on all sides with cement.

The fire was only 400 feet away when the work started. The engineers recognized that this was too close for safety, but they had no choice, for if the wall had been built any farther away it would not have cut off the main body of the coal basin and hence would have been useless as a barrier.

Therefore all the risks had to be borne. As soon as the first shafts were sunk they created a draft that carried the fire literally roaring toward the barrier line.

Fire Fighters Overcome.

The ground was so shattered that it seemed almost like cutting through quicksand. The rocks through which the men had to cut became so hot that a miner could not touch them with his bare hands. An insidious gas came through the cracks in the rock, and it filled all the shafts. Lights would not burn in it, and men who were subjected to its fumes quickly collapsed.

When this fire damp first began its work it created panic, and volunteers could not be induced to go down into the shafts. Undefeated, President Lathrop immediately installed powerful ventilating machinery, and a field hospital on the ground was equipped with the most powerful restoratives.

Thirty minutes at a time was all that a man could stand in the shaft, and so every half hour the force at work had to be changed, and even with this precaution there were frequent cases of prostration. But so well did the hospital force work that not a single death occurred in the midst of the entire operations.

The work of excavation is practically completed. The line of shafts and the open cut have been filled up with fireproof material. The alternating shafts have been sunk and filled up. There is a fireproof wall 700 feet long, 12 feet thick, running from the top of the hill where the coal outcrops to the last shaft, which at a depth of 175 feet reaches the permanent water level. From this shaft to the boundary of the coal seam, 247 feet below the surface, a tunnel is being driven. This will cut the lower coal seam in two, leaving not a scrap of combustible material.

When the tunnel is cut through it will be walled up with cement and filled with mud. This will make the fire wall 1,050 feet over its total length, 700 of which goes to the surface of the ground and is in some places 175 feet from its top base under ground.

The cost of the work is estimated at $250,000, but if it does its work, and there are no misgivings on this point, it will save a four hundred million ton coal filled field and extinguish a fire that has burned for fifty years in the recesses of the earth.

CARRIED FAMOUS MESSAGE.

Rowan, Who Brought Word From Garcia, to Leave Army.

Major Andrew S. Rowan is to retire from the army on his own application on Dec. 1 next. Major Rowan is known popularly all over the land by reason of his feat in the spring of 1898 of penetrating Cuba to the fastnesses of General Calixto Garcia for the purpose of giving to General Garcia a message from this government and of ascertaining whether the Cuban army could co-operate with the army of the United States. Rowan also got from the Cubans points as to the available landing places for the American forces and arranged for a meeting later. His mission was perilous, the more so because news that he had been dispatched upon it somehow came to be published soon after he had started, and the Spaniards were on the alert to intercept him.

After visiting Garcia, Rowan made his way with a trusty aid furnished to him by General Garcia to the north coast of Cuba, whence they sailed in an open boat to New Providence. There they got to a small schooner bound for Key West. When news of Rowan's safe arrival home was published there was great enthusiasm and admiration for him all over the country, and the late George B. Daniels fanned the patriotic flames by scattering over the land the "Message to Garcia," written by Elbert Hubbard.

WEDDING IN RHYME.

How a Judge of Malden, Miss., Ties Nuptial Knot.

Judge Norman Moore, the rhyming jurist, now mayor of Malden, performed in verse the ceremony that made James Davis and Bettie Johnson man and wife. The exact words were:

Jim, will you take Bet
Without regret
To love and cherish
Until one of you perish
And is laid under sod,
So help you God?

The bridegroom replied in the affirmative. Then, turning to the bride, Judge Moore said:

Bet, will you take Jim
And cling to him
Both in and out,
Through thick and thin,
Holding him to your heart
Until death you do part?

The bride blushed with a modest bow of consent, and Judge Moore dismissed them as follows:

Through life's alternative joy and strife
I now pronounce you man and wife.
Go up life's rugged hill
Until you both reach the level,
And now salute your bride,
You big but trusty devil.

Chinch Bug Costs Millions.

Declaring that the annual loss to the farmers of Kansas on account of chinch bugs is from $5,000,000 to $25,000,000, Dr. J. P. Headlee of the Kansas State Agricultural college is experimenting with methods of destroying the pest.

WE OUGHT TO LIVE 150 YEARS

So Says Professor Fisher, Expert on Longevity.

$250,000,000,000 OUR VALUE

Yale Statistician Gives That Figure as Worth of Lives to the Nation—Prussia Far Ahead of Us in the Matter of Conserving Life.

Human life is increasing in length at a very rapid rate, but the span will have to go on increasing for a long time before it becomes even normal, for the human being ought to live to about 150 years if he did himself justice, says Professor Irving Fisher of Yale in a remarkable study which has just been issued by the national conservation commission. The commission believes that the greatest asset of society is human life.

Professor Fisher in a book of 120 pages says that after most careful study of vitality and health statistics he concludes that about 350 years ago the average span of life began to increase, and it has been gaining ever since. At the end of the seventeenth century the average life was about four years longer than at its beginning. At the end of the eighteenth another four years had been added to the average. Then came the nineteenth with its great strides in science in all departments. In the first three-quarters of that century the average length of life increased at the rate of about nine years to the century.

Prussia Far Ahead of Us.

But in the last generation the increase has been faster than ever before. In Massachusetts the average length of human life is now increasing at the rate of about fourteen years per century. Yet Massachusetts is not making so good a record as is presented for Europe, as a whole, where the present increase is at the rate of seventeen years in a century. Prussia, the land of greatest advance in medical, surgical and hygienic science, is increasing its average longevity at the rate of twenty-seven years per century.

Professor Fisher quotes the result of Metchnikoff's investigations to sustain the contention that a normal age for men should be about 150 years. Metchnikoff found that mammals generally lived about five times the period devoted to growing. The one exception is man. The growing period of man is about thirty years. Therefore if he should lengthen his life up to the average of other mammals it would be about 150 years. Professor Fisher does not think that 150 years will be by any means an impossible attainment when the unexplored possibilities of science, sanitation and social betterment are developed.

Century and Half Not Impossible.

The present average age at which people die of old age after having been fortunate enough to dodge automobiles, diphtheria, tuberculosis, hunger and the other causes of death is stated as eighty-three years.

The economic value of human life and the advantage to the social whole in increasing its length are discussed most entertainingly by Professor Fisher. He points out that the sustaining of youth and old age is a tremendous onus on the producing capacity of society. As civilization becomes more complex a longer period must be given to preparation for the real work, consequently there is need for a compensating length of the period within which the individual, having thus been prepared at the social expense, may work for society in order to repay its investment in him.

Professor Fisher summarizes the various statistical estimates that have been made of the economic value of a human life. The American nation is credited with the ownership of $107,000,000,000 worth of property, but Professor Fisher reaches the conclusion that the human beings are economically worth somewhat more than $250,000,000,000 more in addition to this.

How a Life Grows in Value.

In the first year of existence the economic value of a life is only $90, because the infant life involves the great burden of the long preparation for a period of producing usefulness. From this year on the average value of a life increases until it reaches its maximum at thirty years, when it is $4,200 for the average American life. At that age the period of preparation is past, the time of greatest producing capacity is fairly being entered, and the expectation of life is large.

Every immigrant coming into this country is worth $875, says Professor Fisher. That is the minimum figure, representing the labor value. The arrival of 1,000,000 immigrants adds to the wealth of the nation $875,000,000.

HOOKWORM, FOE OF SOUTHERNERS

Disease to Be Fought by Rockefeller's Million.

DESCRIBED BY DISCOVERER.

It Will Take Twenty Years to Eradicate Malady, Says Dr. Stiles—Cripples Its Victims Bodily and Mentally. Can Be Cured Easily.

According to Dr. Charles W. Stiles, the discoverer of the hookworm disease, to eradicate which John D. Rockefeller has given $1,000,000, the malady is confined almost exclusively to the southern states—chiefly to the rural districts. It can be easily cured and easily prevented. Yet thousands of southern country school children are dwarfed both physically and mentally by this malady.

"Children who attend rural schools in the south are in many instances so enfeebled by the disease that they die before coming of age," says Dr. Stiles. "The south is educating rural children between the ages of six and twelve and burying them before they are twenty-one, thus putting their education into the grave.

Cause of Poverty and Distress.

"Hookworm disease is one of the principal causes—by far the most important single cause—of the wretched physical, mental and financial condition of the 'tenant whites' of the south. It is not their fault that they are lazy, shiftless and lacking in ambition.

"By reason of their lack of decent sanitary conveniences many of the country schools and country churches in the south are breeding places for this malady. Whatever they may do for education and religion, they are in their present condition a menace to public health.

The Real "Negro Problem."

"The real acute 'negro problem' in the south at the present moment is the problem of the hookworm, for the negro is the principal scatterer of the parasite, propagating and disseminating it wherever he goes. The white people are the sufferers, particularly the tenant whites.

"The south does not need a higher birth rate, but a lower death rate. Incidentally, if the hookworm mischief were wiped out the labor problem of the south would be solved by saving the children.

"The leaders in southern thought are showing an acute interest in this subject and are co-operating in a movement to better the conditions of their [illegible] misinterpreted and misrepresented neighbors who are in less favorable financial circumstances. Southern physicians, especially the state boards of health, are alive to the subject, and many physicians are giving free treatment for this disease. The better class of southern newspapers are taking a live interest in the matter and are spreading the doctrine of proper sanitation.

Will Take Years to Eradicate It.

"The difficulties of the situation should not, however, be underestimated. It will take twenty years to eradicate the disease, but results should begin to show themselves in about five years."

Medical research in recent years has shown that cases apparently hopeless can be cured easily and quickly; that a couple of simple drugs will relieve a victim and ordinary sanitation will eradicate the hookworm in a neighborhood.

All needed for a successful battle against the disease, according to skilled investigators, were money and properly applied energy. Both are now at hand, thanks to Mr. Rockefeller. A recent article on the hookworm disease stated that $2,000,000 would wipe out every vestige of it in America. Those who heard of Mr. Rockefeller's gift confidently believed that if his $1,000,000 proved as efficacious as was expected he would give the other million readily.

The hookworm (uncinaria is its medical name and uncinariasis that of the disease) is a parasite, which may be roughly described as about the thickness of a hair and the length of a pin. It is plainly visible without the aid of a microscope. Doctors believe that it was imported to this country by the slaves from Africa.

The worm fastens itself to the walls of the intestines. There it justifies its name of "vampire," for it lives upon blood which it draws from the delicate membrane, which it punctures. One end of it—the hook end—holds it so fast that considerable effort is needed for its dislodgment. Sometimes hundreds of these worms afflict a victim. In an autopsy 863 were found.

Affects Body and Mind.

Not only do they draw away the life giving blood, but they fill the intestinal wall so full of holes that its functions are interfered with, and they withdraw so much blood that the victim's mind and body alike are affected.

A gnawing is produced, which is relieved by the eating of common clay, mortar, cloth, even human hair and soot out of chimneys. "Echolia," a mental disease, follows. If a question is asked, "What's your name?" the victim replies, "My name?" then thinks a long while before answering. Eventually there is a complete mental and physical breakdown.

PARIS NOT SO VERY GAY.

Can't Hold a Candle to New York, Is Magoon's Opinion.

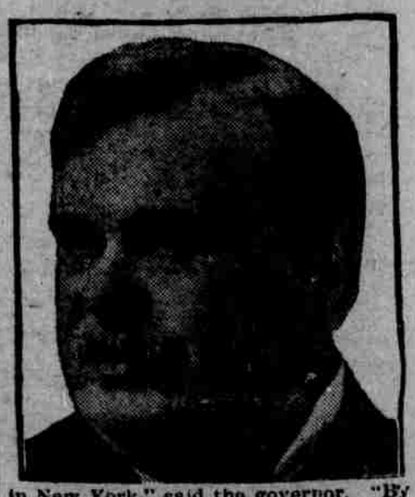
According to Charles E. Magoon, former governor of Cuba, American diplomat and globe trotter of many years' standing, Paris, with all its reputed gayety and folly, is not to be compared in these respects with New York.

"New York is a bigger place in every way," says Mr. Magoon. "Her buildings are bigger, her people are busier, and her lights—why, there is no comparison between the lighted thoroughfares of Paris and those of New York.

"The glare of Broadway has no equal in the world, and the promenades of Paris, with their centuries of fame, are not to be compared with America's great Broadway.

"And as for the hotels—everybody knows that New York hotels are bigger and better than anything in the world and infinitely better living places than the hotels of the French capital.

"The night life of Paris is that of a remote village compared with a night



in New York," said the governor. "By midnight the Place de l'Opera and the Rue de la Paix are completely deserted and as quiet as well regulated graveyards. Why, the doors of my hotel in the Place Vendome were closed at midnight. Imagine such a thing in New York! Just picture a New Yorker who would have to ring at the door of his own hotel to get in to bed a half hour after he had left a theater!"